

Amendments to the Claims

Please amend Claims 1-40 as follows. A complete listing of the claims is presented below.

1. (Currently Amended) A method for forming an index, saidthe index including a subset of instruments selected from a universe of N instruments, saidthe method comprising the steps of:
 - a) assigning a covariance matrix composed of a variance for each of saidthe instruments and a correlation matrix to saidthe universe;
 - b) removing one of saidthe- instruments from saidthe universe;
 - c) calculating a residual variance for each of saidthe instruments remaining in saidthe universe;
 - d) calculating a residual variance for saidthe-universe based on saidthe-residual variance for each of saidthe-instruments and saidthe correlation matrix;
 - e) reinstating saidthe-instrument into saidthe universe;
 - f) repeating steps b-e for each instrument in the universe;
 - g) inserting into saidthe-index saidthe-one of saidthe instruments for which saidthe residual variance of saidtheuniverse is minimized;
 - h) eliminating from saidtheuniverse saidthe-one of saidtheinstruments for which saidthe the residual variance of saidtheuniverse is minimized; and
 - i) repeating steps b-h until saidthe index is formed.

2. (Currently Amended) The method of claim 1, wherein the step of assigning a covariance matrix includes the steps of:

calculating a variance for each of saidthe instruments in saidtheuniverse; and

assigning a correlation value between a plurality of pairs of saidthe instruments in saidtheuniverse.

3. (Currently Amended) The method of claim 2, wherein some of saidthe-instruments in saidthe-universe are associated with an entity and wherein the step of assigning a correlation value further comprises the step of:

assigning a correlation value between each of saidthe-some of saidthe instruments associated with saidthe-entity.

4. (Currently Amended) The method of claim 3, wherein saidthe-correlation value between each of saidthe-some of saidthe-instruments associated with saidthe-entity is identical.

5. (Currently Amended) The method of claim 2, wherein some of saidthe-instruments in saidthe- universe are within a sector in a country and wherein the step of assigning a correlation value further comprises the step of:

assigning a correlation value between each of saidthe-some of saidthe- instruments within saidthe- sector in saidthe-country.

6. (Currently Amended) The method of claim 5, wherein saidthe- correlation value between each of saidthe-some of saidthe- instruments within saidthe- sector in saidthe-country is identical.

7. (Currently Amended) The method of claim 2, wherein some of saidthe instruments in saidthe universe are within a first sector and some of saidthe instruments in saidthe universe are within a second sector and wherein the step of assigning a correlation value further comprises the step of:

assigning a correlation value between each of saidthe some of saidthe instruments within saidthe first sector and each of saidthe some of saidthe instruments within saidthe second sector.

8. (Currently Amended) The method of claim 7, wherein saidthe correlation value between each of saidthe some of saidthe instruments within saidthe first sector and each of saidthe some of saidthe instruments within saidthe second sector is identical.

9. (Currently Amended) The method of claim 2, wherein some of saidthe instruments in saidthe universe are associated with a first country and some of saidthe instruments in saidthe universe are associated with a second country and wherein the step of assigning a correlation value further comprises the step of:

assigning a correlation value between each of saidthe some of saidthe instruments associated with saidthe first country and each of saidthe some of saidthe instruments associated with saidthe second country.

10. (Currently Amended) The method of claim 9, wherein saidthe correlation value between each of saidthe some of saidthe instruments associated with saidthe first country and each of saidthe some of saidthe instruments associated with saidthe second country is identical.

11. (Currently Amended) The method of claim 2, wherein some of saidthe instruments in saidthe universe are associated with an entity, some of saidthe instruments in saidthe universe are within a first sector in a first country, some of saidthe instruments in saidthe universe are within a second sector in a second country, some of saidthe instruments in saidthe universe are associated with a first country and some of saidthe instruments in saidthe universe are associated with a second country and wherein the step of assigning a correlation value further comprises the steps of:

assigning a correlation value between each of saidthe some of saidthe instruments associated with saidthe entity;

assigning a correlation value between each of saidthe some of saidthe instruments within saidthe first sector in saidthe first country;

assigning a correlation value between each of saidthe some of saidthe instruments within saidthe first sector and each of saidthe some of saidthe instruments within saidthe second sector; and

assigning a correlation value between each of saidthe some of saidthe instruments associated with saidthe first country and each of saidthe some of saidthe instruments associated with saidthe second country.

12. (Currently Amended) The method of claim 11, wherein saidthe correlation value between each of saidthe some of saidthe instruments associated with saidthe entity is identical, saidthe correlation value between each of saidthe some of saidthe instruments within saidthe first sector

is identical, saidthe correlation value between each of saidthe some of saidthe instruments within saidthe first sector and each of saidthe some of saidthe instruments within saidthe second sector is identical and saidthe correlation value between each of saidthe some of saidthe instruments associated with saidthe first country and each of saidthe some of saidthe instruments associated with saidthe second country is identical.

13. (Currently Amended) The method of claim 1, wherein the step of calculating a residual variance of the instruments remaining in saidthe universe includes the step of:

$$\text{calculating } RESVAR^m(R) = \sum_{i \in K} (\sigma_i^m)^2 + \sum_{i \in K} \sum_{j \neq i, j \in K} \sigma_i^m \sigma_j^m \rho_{i,j}$$

where

$$\sigma_i^m = \sigma_i^0 \sqrt{(1 - \rho_{i,k_1}^2)(1 - \rho_{i,k_2}^2) \dots (1 - \rho_{i,k_m}^2)}, \quad i \notin K = \{k_1, k_2, \dots, k_m\} \text{ [.] and}$$

where $(\sigma_i^m)^2$ is the residual variance of the i th instrument after m instruments have been removed from the original universe;

where $\sigma_i^0 = w_i d_i \sigma_{Y,i}$ as the standard deviation of the i th instrument's total return;
and

where w^T is a vector of instrument weights;

14. (Currently Amended) The method of claim 1, wherein saidthe index is formed when a predetermined number of instruments in the universe are inserted into saidthe index.

15. (Currently Amended) The method of claim 1, wherein saidthe index is formed when a predetermined percentage of saidthe instruments in the universe are inserted into saidthe index.

16. (Currently Amended) The method of claim 15, wherein saidthe predetermined percentage is a percentage of saidthe universe of N instruments on a weighted basis.

17. (Currently Amended) The method of claim 1, further comprising the step of:
calculating an original dv01 of saidthe universe before the removing one of saidthe instruments step;
wherein the step of inserting into saidthe index saidthe one of saidthe instruments for which saidthe residual variance is minimized includes the step of:
calculating a remaining dv01 of saidthe universe; and
wherein saidthe index is formed when saidthe remaining dv01 of saidthe universe is a predetermined percentage of saidthe original dv01 of saidthe universe.

18. (Currently Amended) The method of claim 1, wherein saidthe instruments are fixed income instruments.

19. (Currently Amended) The method of claim 1, wherein saidthe instruments are equities.

20. (Currently Amended) The method of claim 1, wherein saidthe instruments are FX securities.

21. (Currently Amended) Computer executable program code residing on a computer-readable medium, the program code comprising instructions for causing the computer to:
form an index, saidthe index including a subset of instruments selected from a universe of N instruments:

- a) assign a covariance matrix composed of a variance for each of saidthe instruments and a correlation matrix to saidthe universe;
- b) remove one of saidthe instruments from saidthe universe;
- c) calculate a residual variance for each of saidthe instruments remaining in saidthe universe;
- d) calculate a residual variance for saidthe universe based on saidthe residual variance for each of saidthe instruments and saidthe correlation matrix;
- e) reinstate saidthe instrument into saidthe universe;
- f) repeat steps b-e for each instrument in the universe;
- g) insert into saidthe index saidthe one of saidthe instruments for which saidthe residual variance of saidthe universe is minimized;
- h) eliminate from saidthe universe saidthe one of saidthe instruments for which saidthe residual variance of saidthe universe is minimized; and
- i) Repeat steps b-h until saidthe index is formed.

22. (Currently Amended) The computer executable program of claim 21, wherein the program code additionally causes the computer to:

calculate a variance for each of saidthe instruments in saidthe universe; and
assign a correlation value between a plurality of pairs of saidthe instruments in saidthe universe.

23. (Currently Amended) The computer executable program of claim 22, wherein some of saidthe instruments in saidthe universe are associated with an entity and wherein the program code additionally causes the computer to:

assign a correlation value between each of saidthe some of saidthe instruments associated with saidthe entity.

24. (Currently Amended) The computer executable program of claim 23, wherein saidthe correlation value between each of saidthe some of saidthe instruments associated with saidthe entity is identical.

25. (Currently Amended) The computer executable program of claim 22, wherein some of saidthe instruments in saidthe universe are within a sector in a country and wherein the program code additionally causes the computer to:

assign a correlation value between each of saidthe some of saidthe instruments within saidthe sector in saidthe country.

26. (Currently Amended) The computer executable program of claim 25, wherein saidthe correlation value between each of saidthe some of saidthe instruments within saidthe sector in saidthe country is identical.

27. (Currently Amended) The computer executable program of claim 22, wherein some of saidthe instruments in saidthe universe are within a first sector and some of saidthe instruments in saidthe universe are within a second sector and wherein the program code additionally causes the computer to:

assign a correlation value between each of saidthe some of saidthe instruments within saidthe first sector and each of saidthe some of saidthe instruments within saidthe second sector.

28. (Currently Amended) The computer executable program of claim 27, wherein saidthe correlation value between each of saidthe some of saidthe instruments within saidthe first sector and each of saidthe some of saidthe instruments within saidthe second sector is identical.

29. (Currently Amended) The computer executable program of claim 22, wherein some of saidthe instruments in saidthe universe are associated with a first country and some of saidthe instruments in saidthe universe are associated with a second country and wherein the program code additionally causes the computer to:

assign a correlation value between each of saidthe some of saidthe instruments associated with saidthe first country and each of saidthe some of saidthe instruments associated with saidthe second country.

30. (Currently Amended) The computer executable program of claim 29, wherein saidthe correlation value between each of saidthe some of saidthe instruments associated with saidthe first country and each of saidthe some of saidthe instruments associated with saidthe second country is identical.

31. (Currently Amended) The computer executable program of claim 22, wherein some of saidthe instruments in saidthe universe are associated with an entity, some of saidthe instruments in saidthe universe are within a first sector in a first country, some of saidthe instruments in saidthe universe are within a second sector in a second country, some of saidthe instruments in

saidthe universe are associated with a first country and some of saidthe instruments in saidthe universe are associated with a second country and wherein the program code additionally causes the computer to:

assign a correlation value between each of saidthe some of saidthe instruments associated with saidthe entity;

assign a correlation value between each of saidthe some of saidthe instruments within saidthe first sector in saidthe first country;

assign a correlation value between each of saidthe some of saidthe instruments within saidthe first sector and each of saidthe some of saidthe instruments within saidthe second sector; and

assign a correlation value between each of saidthe some of saidthe instruments associated with saidthe first country and each of saidthe some of saidthe instruments associated with saidthe second country.

32. (Currently Amended) The computer executable program of claim 31, wherein saidthe correlation value between each of saidthe some of saidthe instruments associated with saidthe entity is identical, saidthe correlation value between each of saidthe some of saidthe instruments within saidthe first sector is identical, saidthe correlation value between each of saidthe some of saidthe instruments within saidthe first sector and each of saidthe some of saidthe instruments within saidthe second sector is identical and saidthe correlation value between each of saidthe

some of ~~said~~the instruments associated with ~~said~~the first country and each of ~~said~~the some of ~~said~~the instruments associated with ~~said~~the second country is identical.

33. (Currently Amended) The computer executable program of claim 21, wherein the program code additionally causes the computer to:

$$\text{calculate } RESVAR^m(R) = \sum_{i \notin K} (\sigma_i^m)^2 + \sum_{i \notin K} \sum_{j \neq i, j \notin K} \sigma_i^m \sigma_j^m \rho_{i,j}$$

where

$$\sigma_i^m = \sigma_i^0 \sqrt{(1 - \rho_{i,k_1}^2)(1 - \rho_{i,k_2}^2) \dots (1 - \rho_{i,k_m}^2)}, \quad i \notin K = \{k_1, k_2, \dots, k_m\}.$$

34. (Currently Amended) The computer executable program of claim 21, wherein ~~said~~the index is formed when a predetermined number of instruments in the universe are inserted into ~~said~~the index.

35. (Currently Amended) The computer executable program of claim 21, wherein ~~said~~the index is formed when a predetermined percentage of ~~said~~the instruments in the universe are inserted into ~~said~~the index.

36. (Currently Amended) The computer executable program of claim 35, wherein ~~said~~the predetermined percentage is a percentage of ~~said~~the universe of N instruments on a weighted basis.

37. (Currently Amended) The computer executable program of claim 21, wherein the program code additionally causes the computer to:

calculate an original dv01 of saidthe universe before one of saidthe instruments is removed from saidthe universe ;

calculate a remaining dv01 of saidthe universe after one of saidthe instruments is inserted into saidthe index; and

wherein saidthe index is formed when saidthe remaining dv01 of saidthe universe is a predetermined percentage of saidthe original dv01 of saidthe universe.

38. (Currently Amended) The computer executable program of claim 21, wherein saidthe instruments are fixed income instruments.

39. (Currently Amended) The computer executable program of claim 21, wherein saidthe instruments are equities.

40. (Currently Amended) The computer executable program of claim 21, wherein saidthe instruments are FX securities.